07/2013

Mod: GA-80/N

Production code: MINI JUMBO

Diamond
catering equipment

USER MANUAL

Version 06.03 JUM.EN

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PRIOR TO STARTING TO USE THE MACHINE, MACHINE REGISTRATION TO BE COMPLETED BY THE USER

Register the machine using the following data. This information is necessary if the supplier or Henkelman BV is contacted concerning questions or references about the specific machine.

DATA ON MACHINE TAG

Relevant data for answering questions can be found on the machine tag. The machine tag is located at the rear of the machine. Note down the following data:

1. MACHINE TYPE

2. MACHINE NUMBER (MACHINE NO.)

3. VOLTAGE (TENSION)

CONTROL PANEL DATA

When starting the machine two codes first appear on the display in succession before control switches to user mode. The first code indicates the software version of the control software and the second code indicates the options active. Write both codes in the space below:

4. CODE 1

5. CODE 2

IMPORTANT FOR INSTALLATION !!! READ THIS FIRST !!!

GENERAL

- First read this manual carefully before the machine is put into operation. This manual contains relevant information and instructions for starting up, maintenance and applications. If problems arise with the machine that could have been avoided by referring to this manual then the guarantee expires.
- Henkelman BV wishes the customer lots of pleasure for an extended period from the purchase of the machine. If there are any problems or questions then the customer can always approach the supplier or Henkelman BV.

ENVIRONMENT

- The machine must be moved or transported in an upright position. The machine may NOT be tilted as this can cause damage to the pump.
- Place the machine on a flat, level floor. This is essential for problem free operation of the machine.
- Enough space must be left around the machine for good ventilation. The space must be at least 5 centimetres.
- The ambient temperature in which the machine is operated must be between 5 ^{0}C and 30 ^{0}C. When operating the machine in other ambient temperatures the user must contact the supplier for advice.
- NEVER place the machine directly next to a heat source or a steaming device (for example a combo-steamer, dishwasher or stove)

POWER / EARTH

- Check that the voltage stated on the machine tag is the same as the mains voltage.
- Always connect the machine correctly to an earthed socket to avoid danger for fire or electrical shocks (earth connection is green/yellow).
- The power cable must always be free and nothing may be placed on it.
- Replace the power cable immediately if damaged.
- Always disconnect the power if there are problems with the machine or during maintenance, prior to starting work on the machine.
- If the machine is stationary for long periods then the power should always be disconnected..

VACUUM PUMP

- Check before starting the machine if there is oil in the pump (see page 16). NEVER start the machine without oil in the pump.
- Use the right type of oil for the pump (see page 17).
- After moving and/or transporting the machine, always first check the oil level before re-starting operation.
- When starting the machine for the first time or after a lengthy idle period first run the conditioning programme before operating the machine (see page 15).

IMPORTANT FOR OPERATION !!! READ THIS FIRST !!!

GENERAL

- Never pack products that can be damaged during or after vacuum packaging. Live oats may never be vacuumed.
- Refer to this manual if in doubt as to the operation and/or functioning of the machine. If the manual does not offer a solution consult the supplier.
- The guarantee and/or liability expires if damage is caused by repairs and/or changes made by you. In the case of malfunctions contact the supplier.
- In the case of malfunctions always stop the machine and remove the power cable from the wall socket.

GENERAL MAINTENANCE

- It is essential that the machine is serviced regularly to guarantee operation and to keep the machine in optimal condition. The maintenance schedule is clearly defined on page 15. The guarantee automatically expires due to overdue or sloppy maintenance.
- Always remove the power cable from the wall socket for maintenance work, the machine must be completely disconnected.
- If there are doubts about the maintenance activities or if the machine fails to work correctly always contact the supplier.

TRANSPARENT LID

- Never locate the machine near a heat source. This can cause damage to the lid (cracks).
- Never place hot, sharp, or heavy objects on the lid. These can cause damage to the cover (cracks) in the long run.
- Always clean the cover with solvent-free cleaning agents. Solvents can damage the lid.
- Check at least once a week if there are cracks in the lid. If cracks are visible in the lid then the machine must IMMEDIATELY be turned off and not used again until the lid has been replaced. Continuing to work with a cracked lid can cause the lid to implode. All guarantees and/or liability expire in the case of accidents and/or damage caused by working with a cracked lid.
- Replace the transparent cover every 4 years as a precautionary measure as a standard maintenance interval.

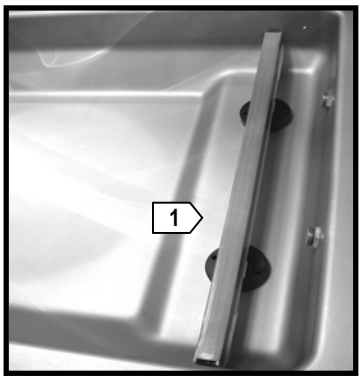
VACUUM PUMP

- Regularly check the level and quality of the oil in the pump. If too little oil or the quality of the oil is bad (turbid), replace or top up the oil before operating the machine (see page 16). Let the pump conditioning program run at least one full cycle before replacing the oil (see page 15).
- Use the right type of oil for the pump when replacing or topping up (see page 17).
- Use the conditioning program at least once a week to enhance correct and long-lasting pump operation (see page 15).

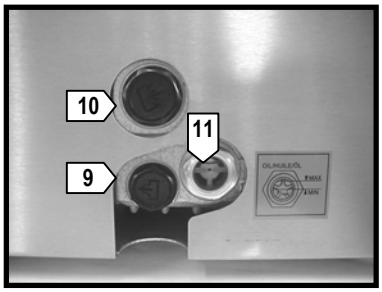
WARNING SIGNS ON THE MACHINE !!!

- ONLY use the prescribed power supply voltage.
- Insert the plug firmly into the mains wall socket.
- Always connect the machine to an earthed wall socket.
- Always remove the plug during maintenance or when the machine is not in use for extended periods.

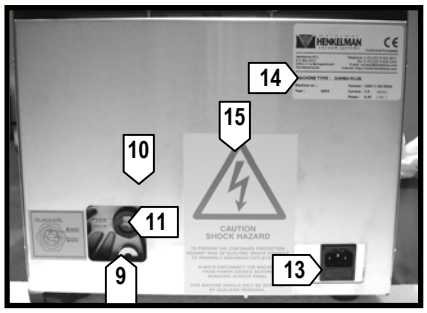
IMPORTANT MACHINE PARTS



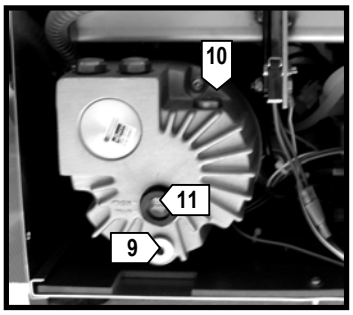
Vacuum chamber



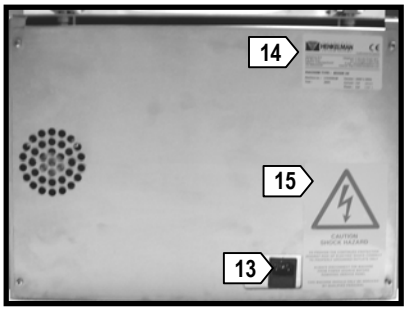
Side view JUMBO 35 / 42



Rear view MINI JUMBO / JUMBO PLUS



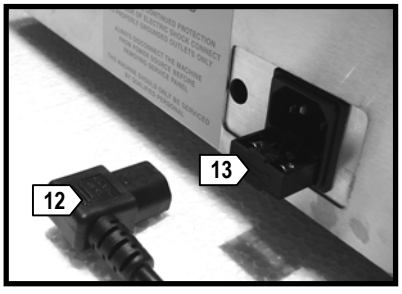
Rear view MINI JUMBO / JUMBO PLUS underneath left (cover removed)



Rear view JUMBO 35 / 42

1. Sealing bar in vacuum chamber mounted sealing supports with a click system or screws
2. Silicone holder mounted on transparent lid
3. Lid gasket in lid for hermetic seal
4. Gas springs for opening lid after machine cycle (MINI JUMBO / JUMBO PLUS 1 gas spring in the middle)
5. Vacuum / Ventilation opening
6. Control panel
7. Vacuum pressure meter
8. ON/OFF Switch
9. Oil drain plug
10. Oil fill plug
11. Oil inspection window
12. Power cable
13. Fuse holder with fuses
14. Machine tag
15. Warning stickers

Appearance of parts and machines can deviate per model from illustrations



Fuse holder / Power cable

STARTING AND OPERATING THE MACHINE

ON/OFF SWITCH

The ON/OFF switch is used to turn the machine on and off before and after operation.

CAUTION – The ON/OFF switch does not completely remove all power from the machine. The power cable must be unplugged from the wall socket to remove all power from the machine. Ensure that the machine is completely without power during maintenance and repair activities is.

When the machine is turned on (with the ON/OFF switch), then the pump only runs during the vacuum cycle.

START MACHINE

When the machine is connected, then the machine can be turned on using the ON/OFF switch. When starting the machine two codes first appear in succession on the display before control switches to user mode.

The first code indicates the control software version. The second code indicates the machines active options. Note both codes on page 4 of this manual as they are important for the supplier or Henkelman BV when making enquiries and/or if any problems arise.

After switching to user mode the machine is ready for use. If the machine is new or has not been used for an extended period, then it is important to run the conditioning program for the pump (15 minutes) to maintain the pump. For instructions on the conditioning programme, see page 15.

After switching to the user mode the display could read [OIL]. This means that the operating hours counter is turned on and the set number of operating hours has elapsed. The hour counter is turned off by default but the client supplier can use it as a reminder for regular maintenance activities.

When [Oil] is displayed the machine can be still be used as usual but it is advisable to either turn off the hour counter or to reset it.

Contact the supplier for more information about setting or turning off the operating hours counter.

STANDARD USER OPERATIONS FOR THE MACHINE

1. Turn the machine on with the ON/OFF switch. Warm the pump up with the condition programme if the machine has stood idle for some time (instructions page 15).

2. Fill the vacuum bag with product. Select the correct format bag that easily fits around the product but is not too large for the product. Ensure hygienic conditions during this operation. Packaging materials, product and hands must be clean and if possible dry.

3. Lay the vacuum bag in the chamber. The open side must be laid over the sealing bar. The bag may however not extrude from the chamber. If the product is a lot lower than the height of the sealing bar then insertplates that are supplied standard with the machine can be used. This makes the operation easier and reduces the cycle time.

4. The vacuum bag must be placed over the sealing bar without any folds.

5. Multiple vacuum bags can be placed over the sealing bar if the sealing bar is longer than the opening of the vacuum bag. Vacuum bags may not however be laid on top of each other on the bar.

6. Set the correct value for vacuum and sealing functions. See page 13 for setting the function values.

7. Close the lid and the machine automatically runs through the full cycle of installed functions. The lid opens automatically when the last function “ventilation” has finished.

8. If necessary the cycle can be fully or partially interrupted by pressing the [VACUUM STOP] key or the [STOP] key.

The [VACUUM STOP] key interrupts the active function (vacuum or sealing) and automatically continues with the next function.

The [STOP] key interrupts the entire cycle and goes immediately to the ventilation function.

9. The packed product can be removed from the machine.

SAFETY and PRODUCT PROTECTION

The packing process can be partially or fully interrupted at all times:

- Stop active function, press on [VACUUM STOP] key
- Stop full machine cycle, press [STOP] key

OPTIMAL AND EFFICIENT PACKAGING RESULT

- Use the correct format and good quality vacuum bags
- Maximum 75% product filling in vacuum bag
- Place vacuum bag fold free over seal beam (use correct number in inlay plates in chamber)

CONTROL PANEL

CONTROL PANEL VERSION

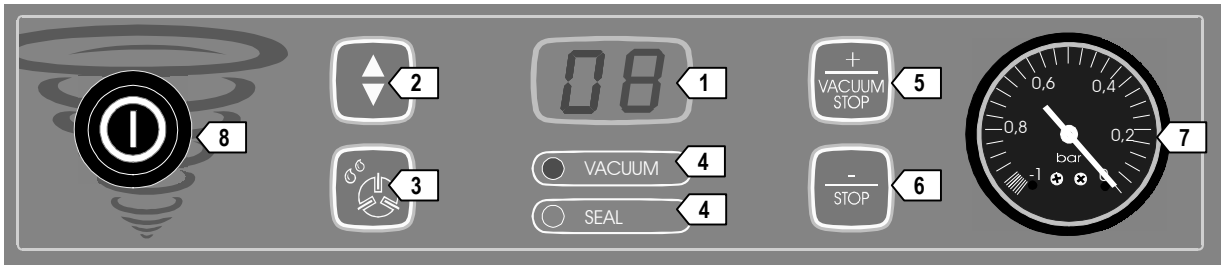
Digitale time control

The digital control is implemented with a function program that can be set with different function values per cycle (to be able to pack different products). A program cycle is the complete program of set functions (vacuum and seal) that the machine runs through to package a product.

The control panel is implemented standard with a conditioning program for the regular maintenance of the pump and two STOP keys for complete function interruption or for only active function interruption. There are also a number of built-in service programs. Contact the supplier or Henkelman BV for more information about these functions.

The value of the functions can be set for a certain time period.
The vacuum function can be set to whole seconds with a maximum of 99 seconds.
The seal function can be set with an interval of 0.1 seconds and a maximum of 6.0 seconds.

CONTROL PANEL LAYOUT



1. Display
Displays the status of the active function during the run of the program cycle or the set value of the selected function when machine is not running.

2. FUNCTION SELECTION Key
Select function (vacuum or seal) for viewing or changing function values. The function is selected if the function light is on in front of the function description under the display.

3. CONDITIONING PROGRAMME Key
Start the conditioning program for pump (duration 15 minutes). For instructions on the program, see page 15.

4. FUNCTION Lights
A light in front of the function indicates that the function is active during the program cycle or that the function is selected for view or change.

5. + / STOP VACUUM Key

Function during cycle	Interruption of the active function during the program cycle. The cycle immediately continues with the next function.
General function.	Increment the value of the selected function.

6. - / STOP Key

Function during cycle	Terminates the program cycle completely. The cycle immediately switches into the ventilation function.
General function	Decrement the value of the selected function.

7. Vacuum meter

Displays the pressure in the vacuum chamber.

8. ON/OFF Switch

The ON/OFF switch is used to turn the machine on and off before and after operation. The switch turns on all units in the machine. Caution, the switch does not completely remove all power from the machine.

CONTROL PANEL USE

When the machine is turned on it is ready for use once the two operating codes have displayed.

Description of the program cycle for digital time control

1. Functions (vacuum and sealing) are set with the correct values (see page 13 for settings)

2. Close the lid.

3. Vacuum function
The machine starts to vacuum the chamber.
The light in front of [VACUUM] goes on.
Display : decrementing time per second starting at the time set (max. 99 sec.).
Vacuum meter starts increasing to the left.

4. Sealing function
Once the vacuum function is finished, the sealing function starts to seal the vacuum bag(s).
The light in front of [SEAL] goes on.
Display : decrementing time per 0.1 second starting at the time set (max. 6.0 sec.).
The reading on the vacuum meter stays the same.

5. Ventilating function
After ending the seal function the ventilating function starts ventilating the chamber to 1 atmosphere/ATO and the lid opens.
There are no longer any lights on in front of the functions.
Display : lines moving up and down until the lid is opened.
The vacuum meter runs back to the right to zero and the lid opens automatically.

6. The product is packed and ready to remove.

Set/change function values

The following steps must be followed to change the function values for vacuum and/or seal :

Press the FUNCTION SELECT Key to select the required function. The function light will light up when the function is selected.

Press the [+ / STOP VACUUM] or [- / STOP] keys for incrementing or decrementing the function values respectively. It takes 0.5 seconds before the value begins to change.

After changing the value(s) the machine must run through the cycle once (see previous page) to record the values.

Vacuum function
The vacuum function value can be incremented or decremented per second with a maximum of 99 seconds and a minimum of 2 seconds.

If while changing the vacuum function setting the [+ / STOP VACUUM] or [- / STOP] key is held down then the first 5 seconds will be incremented or decremented per second. Then intervals of 10 seconds will appear. If the key is released then the settings can be changed again per second.

Sealing function
The seal function setting can be increased or decreased with a maximum of 6.0 sec. and a minimum of 0.5 sec.

If while changing the seal function setting the [+ / STOP VACUUM] or [- / STOP] key is held down then the first 0.5 seconds will be incremented or decremented per 0.1 second. Then intervals of 1.0 second will appear. If the key is released then the settings can be changed again per 0.1 second.

Service programs control panel

The control panel is also equipped with a number of service programs that can be useful during regular maintenance or repairs. The conditioning program for the pump is the most used service program (see explanation on page 15).

Contact the supplier for more information about the use of other service programs.

MACHINE MAINTENANCE

GENERAL

Regular, thorough maintenance is essential for extending the machine's life, for preventing malfunctions and for achieving an optimal packaging result. If the machine is used intensively (more than 5 hours per day) then it is a professional service is recommended every 6 months. In other cases one complete service per year is sufficient (depending on location, environment and products).

There are however also small maintenance activities that must be carried out more regularly and that the user can do himself. The following page contains an overview of these activities.

IMPORTANT BEFORE AND DURING MAINTENANCE

- The machine must always be completely voltage free before any maintenance is carried out on it. Always remove the plug from the wall socket.
- If the machine is not functioning properly or if it produces strange noises, turn it off immediately with the ON/OFF switch and contact the supplier.
- When cleaning transparent lids **NEVER** use cleaning agents containing solvents. Check at least once a week if there are cracks in the lid. In case of cracks, turn off the machine immediately and contact the supplier.
- High pressure cleaning is not permitted for cleaning the machine. High pressure cleaning can cause considerable damage to electronic and other parts of the machine.
- Water may never be permitted to enter either the extraction nozzle of the chamber or the blow-off hole of the pump. This would cause irreparable damage to the pump.
- Larger services must always be carried out by an authorised supplier.
- The JUMBO machines are designed for a maximum of 5 hours per day. The supplier cannot be held responsible for any malfunctions or defects if these operating limits are clearly exceeded without consultation.
- The machine must be moved or transported in an upright position. The machine may **NOT** be tilted as this can cause damage to the pump.
- The supplier cannot be held responsible for any malfunctions or defects if the maintenance instructions in this manual are not followed.

STANDARD MAINTENANCE SCHEDULE FOR THE MACHINE

Daily

- Clean the vacuum chamber, lid and housing after use with a damp cloth.
- *Be careful that no cleaning agents containing solvents are used.*
- *Make sure that no high pressure cleaner is used.*

Weekly

- Check the oil level and replace or top up oil if the oil is turbid or the oil level is too low. For instructions, see page 16.
- Activate the conditioning program for the pump at least once a week.
- Check the seal beam for damage. Replace teflon tape/seal wire if the seal quality is no longer sufficient or if the teflon tape/seal wire is no longer taught on the bar. For instructions, see page 18-19.
- Check the lid gasket and replace it if the gasket is damaged or stretched. For instructions, see page 17-18.
- Inspect the transparent lid for cracks. If cracks are visible, turn off the machine immediately and contact the supplier.

Every Six Months

- Replace oil at least once every 6 months.

Yearly

- Inspect the oil exhaust filter for saturation. If saturated, replace the filter. For instructions, see page 17-18.
- Contact the supplier for a professional service

Four-yearly

- Replace transparent lid and the gas springs
- Replace seal cylinder membranes.

VACUUM PUMP MAINTENANCE

It is very important to regularly service the pump to ensure extended and correct operation. The following activities are essential for correct maintenance. If the machine is used regularly then it is advisable to have the pump fully inspected at least once a year by the supplier to ensure extended and problem free operation. Contact the supplier for more advice and information.

Conditioning program

The conditioning program ensures that the pump is thoroughly rinsed. During the programme the pump and oil reaches operating temperature so that the oil can better absorb any moisture and contaminants and filter them. The high temperature enables any moisture in the pump to evaporate minimising the risk for corrosion in the pump.

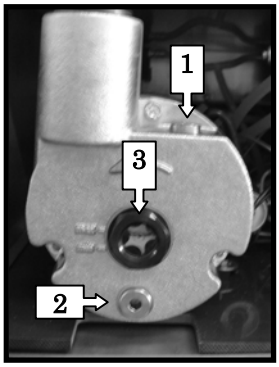
The program lasts 15 minutes and it is advisable to run it at least once a week. Turn on the machine, press the key [conditioning program], and close the lid. The program runs automatically. During the program the display will display moving dots.

The program can be interrupted at any time using the [STOP] key. It is however important for the sake of good maintenance that the program completes a full 15 minute cycle and therefore advisable only to interrupt the cycle for something urgent.

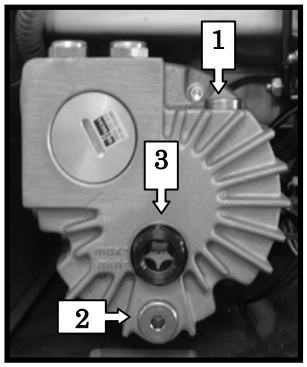
It is also advisable to run the program before using the machine for the first time, after the machine has been stationary for a lengthy period of time, and especially prior to changing oil.

Changing Oil / Filling Up

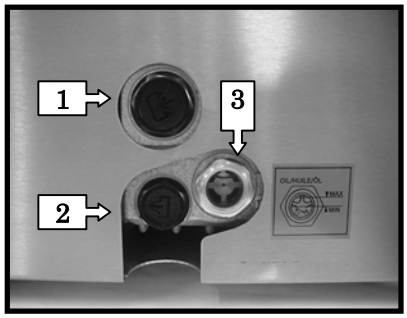
The oil level and oil quality must be checked at least once a week. The oil inspection window serves this purpose. Top up the oil level if it is too low. Replace the oil if it is turbid. Oil must be replaced at least once every 6 months.



Rear view MINI JUMBO after opening rear end.



Rear view JUMBO PLUS after opening rear end.



Side view JUMBO 35 / JUMBO 42

1. Oil fill plug
2. Oil drain plug
3. Oil inspection window

Take care to use the correct type of oil for the pump

Beware of hot oil fumes during drainage

Draining oil

If the oil is white or turbid when checked then it must be replaced. Before draining off the oil let the conditioning program run a full cycle. The dirt and moisture is absorbed by the oil and the oil becomes thinner making draining easier.

After the program has ended the drainage plug can be removed.

CAUTION, when unscrewing hot oil fumes can escape. The oil now drains from the drain hole (an oil pan must be placed underneath). When the oil has drained, tilt the machine slightly so that all residual oil can drain off. After draining the oil drain plug is replaced.

Filling up oil

After draining or if the oil level has dropped, oil needs to be filled up. The oil fill plug must be removed with the correct size spanner. The pump can now be filled with oil. Make sure that you add the correct amount (see table on page 24) For the models MINI JUMBO and JUMBO PLUS, slide the component plate backwards to facilitate filling.

TAKE CARE to fill with small amounts at intervals. Fill the oil level to the top of the oil level indicator sticker.

Oil types and amounts

It is important to use the correct type and quantity of oil for the pump. The wrong type or too much oil could damage the pump. The ambient temperature where the machine is operated is also important for the type of oil. See amounts and types with related ambient temperatures in the table on the next page.

Examples of supplier brands for the standard types of oil are Shell Vitrea, Aral Motanol GM, BP Energol CS, or Texaco Regal R+ O with related viscosity numbering. If the machine is used outside normal specifications regarding ambient temperature, contact the supplier.

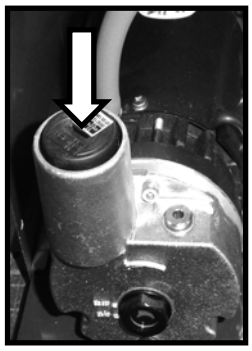
Machine Type	Pump Capacity	Filling (litres)	Ambient temperature Standard Oil type 10 - 30 °C	"Cold" Oil type 5 - 10 °C	"Hot" Oil type 30 - 40 °C
MINI JUMBO	004 m³/h	0.05	**Viscosity VG 22**	**VM 22**	**VS 22**
JUMBO PLUS	008 m³/h	0.2	**Viscosity VG 32**	**VM 32**	**VS 32**
JUMBO 35 / JUMBO 42	016 m³/h	0.3	**Viscosity VG 32**	**VM 32**	**VS 32**

Machines are supplied with standard type oil.

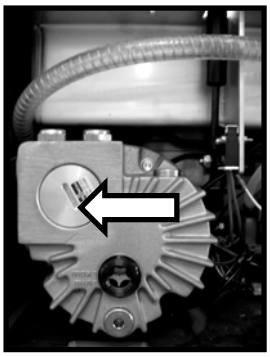
Inspect and change oil exhaust filter

There is an oil exhaust filter in the pump that absorb and filter oil vapours. The filter will become saturated after a period of time and needs to be replaced. This is on average between 9 and 18 months. When the filter is saturated it is no longer possible to achieve maximum vacuum and the machine starts smoking.

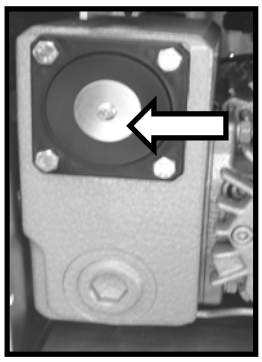
Oil exhaust filter housing types



MINI JUMBO



JUMBO PLUS



JUMBO 35 / 42

- **Filter housings are at the rear of the machine.**

Change oil exhaust filter MINI JUMBO / JUMBO PLUS

MINI JUMBO

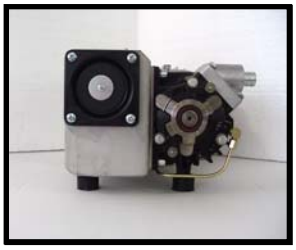
JUMBO PLUS

Take care that the filter gasket does not remain behind when removing the filter. Take care that the filter gasket is correctly placed on the new filter.

Open the back
Slide the component board to the back
Unscrew the filter

Remove the old filter from the housing
Place the new filter in the housing.
Screw the filter on again

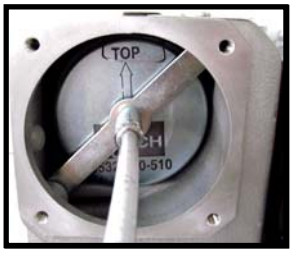
Change oil exhaust filter JUMBO 35 / JUMBO 42



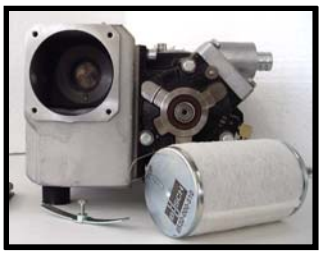
Open the rear of machine for the pump

Unscrew the cover from the filter housing

The filter is visible clamped behind a tensioner



Release the tensioner with a spanner



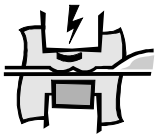
Remove tensioner and filter from the housing

Ensure that the sealing ring does not remain behind when removing the filter

- *Position and clamp the new filter (ensure that the seal ring is in position) in the housing.*
- *Screw the cover back onto the housing.*
- *Screw the back plate back onto the machine.*

- *Pumps and housing can have a different appearance but the principle of replacing them remains the same.*
- *Take care that the correct type of filter is used for the pump type, see page 29 for correct type of filter for the type of pump.*
- *It is advisable to have the suppler do this service.*

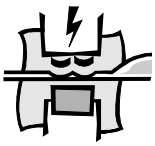
SEAL SYSTEM MAINTENANCE



SINGLE SEAL
1 x 3,5 mm seal

The seal system for the JUMBO series is a single 3.5 mm convex sealing wire.

The seal quality is partially dependent on the maintenance of the sealing bar and silicone holder. The main maintenance activities are the daily cleaning of the sealing bar and silicone holder with a damp cloth and a weekly inspection of the bars with replacement of the sealing wire, teflon tape or silicone rubber if irregularities appear on top of the bar or the seal quality is insufficient.
The models MINI JUMBO and JUMBO PLUS are equipped with a hard-tissue sealing bar with clamps on both sides of the sealing beam. The sealing bar is attached to the holders with screws.



DOUBIE SEAL
2 x 3,5 mm seal

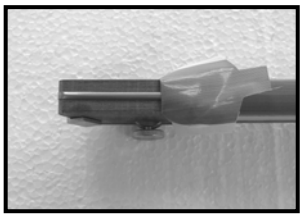
CUT_OFF-SEAL
1 x 3,5 mm seal
1 x 1,1 mm cut

The models JUMBO 35 and JUMBO 42 are equipped with an anodised aluminium sealing bar with clamps on the bottom of the sealing bar. The sealing bar is clicked to the holders.

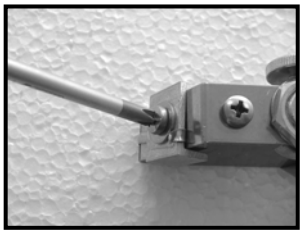
The steps for replacing the sealing wire and teflon tape are described on the following pages. The appearance may differ but the procedure remains the same.

The average maintenance cycle of the sealing bar (teflon tape / sealing wire) is **at least once every 3 months**.
(This indication refers to regular use of the machine and packaging standard products with standard vacuum packaging materials. No rights can be derived from this indication)

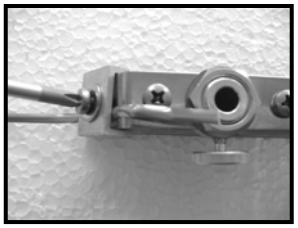
Replace sealing wire and teflon tape on Mini Jumbo and Jumbo Plus (only single seal)



Remove teflon tape



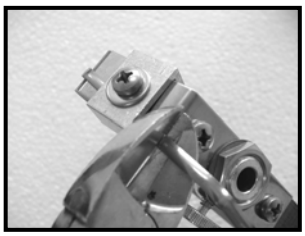
Unscrew and remove sealing wire



Screw sealing wire down under a clamp plate.

Pull the wire tight in second clamp plate using a pair of pliers and a vice.

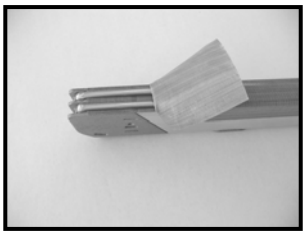
1. Remove the sealing bar from the holders by unscrewing the screws
2. Remove the teflon tape from the sealing bar.
3. The old sealing wire can be removed by unscrewing the clamp bands and pulling the wires from the plate or groove.
4. Degrease the sealing bar with a clean cloth.
5. Cut a new piece of sealing wire to the length of the sealing bar plus about 15 cm (± 6 inches).
6. Push one end of the wire through the clamp plate or grooves on the side or bottom of the sealing bar and screw down.
7. Clamp the sealing bar with the top facing down in a vice and pull the sealing wire through the clamp plate or groove on the other side of the sealing bar.
8. Pull the wire taught with a pair of pliers and screw it down at the same time. Ensure that the wire is pulled tight and straight prior to screwing down the wires.
9. It is handy to use a pair of pliers as a lever for optimal wire tension. Grip the end of the sealing bar in a vice and tension the wire by pressing the bar down.
10. Cut the protruding wire ends off on both sides directly past the screws.
11. Cut a piece of teflon tape as long as the sealing bar plus about 5 cm (± 2 inches).
12. Stick new teflon tape straight over the new sealing wire. Ensure that the teflon is straight on the sealing bar and that the sticky part is stuck on the side. Ensure that the teflon is stuck on the bar smoothly and without folds.
13. Cut the teflon tape off so that the sticky part does not get stuck on the sides of the clamps but that the teflon extends over the top of the clamps.
14. Place the sealing bar back in the machine. Ensure that the sealing bar is properly clicked onto the holders or that the screws are hand-tight screwed in.



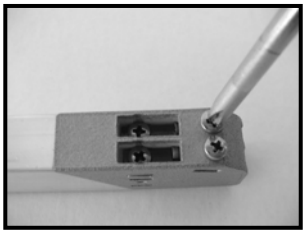
Cut off the ends of the sealing wire and stick teflon tape tightly on the beam without folds.

See page 22 for correct parts and quantities

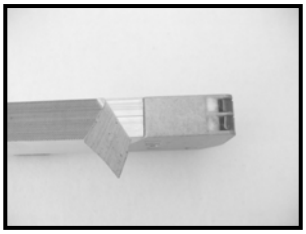
Replace sealing wire and teflon tape Jumbo 35 and Jumbo 42 (double and cut-off seal)



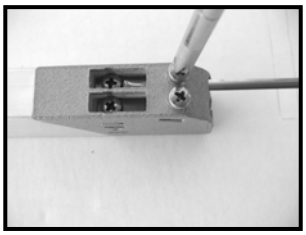
Remove teflon tape



Unscrew and remove sealing wires

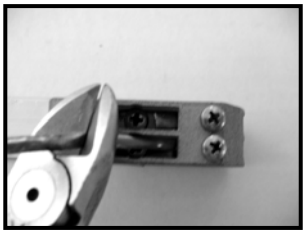


Replace the teflon tape



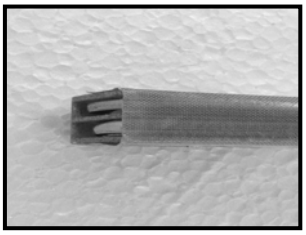
Screw down new wires onto clamping plate

Pull wires taught using a pair of pliers and a vice and screw the wires down on the clamping plate.



1. Remove the sealing bar from the holder by releasing the click system.
2. Remove the teflon tape from the sealing bar.
3. The old sealing wires and cut-off wires (if applicable) can be removed by unscrewing the clamp (see illustration) and pulling the wires from the grooves.
4. Remove the teflon tape that is attached to the top of the sealing bar and stick a new piece of teflon tape to the bar of the same length after having degreased and cleaned the bar with a dust free cloth.
5. Cut a new peace of sealing wire or cut-off wire to the size of the sealing beam plus about 15 cm (± 6 inches). If 2 sealing wires or an extra cut-off wire is on the sealing beam then a second sealing wire or cut-off wire must of course be cut.
6. Place the end of the wire or wires through the groove(s) on the side of the sealing beam and screw the wires to the bottom.
7. Place the sealing bar top down in a vice and pull the sealing wire or wires through the other side of the groove(s) on the sealing beam.
8. Pull the wires tight with a pair of pliers and screw them down at the same time. Ensure that the wire (wires) is (are) pulled taught and straight with the help of a pair of pliers before the wires are screwed down.
9. It is handy to use a pair of adjustable pliers as a lever for optimal wire tension. Place one end of the sealing beam in the vice and stretch the wire (wires) by pressing down the bar.
10. Cut off the extruding wire end(s) on both ends after having screwed it tight.
11. Cut a piece of teflon tape as long as the sealing bar plus about 5 cm (± 2 inches).
12. Stick the new teflon tape straight over the new sealing wire (wires). Ensure that the teflon is straight on the sealing bar and that the sticky part is stuck on the side. Ensure that the teflon is stuck on the bar smoothly and without folds.
13. Cut the teflon tape off so that the sticky part does not get stuck on the sides of the clamps but that the teflon extends over the top of the clamps.
14. Place the sealing bar back in the machine. Ensure that the sealing beam is properly clicked onto the holders or that the screws are firmly screwed in.

See page 22
for correct parts and quantities



Cut off the ends of the sealing wire and stick Teflon tape over the sealing beam without folds

SILICONE HOLDER AND LID GASKET MAINTENANCE

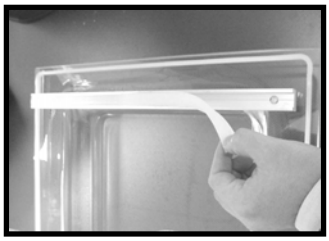
Replace the rubber silicone holder

The silicone holder must be inspected weekly for roughness on the silicone rubber (mainly caused by burning by the sealing wire). If irregularities appear then the silicone rubber must be replaced.

Average maintenance cycle for silicone rubber is **at least once every 6 months**

(This indication refers to regular use of the machine with standard products. No rights can be derived from this indication)

1. Remove the old silicone rubber from the holder.
2. Cut a new piece of silicone rubber the same size as the old one. The same size is very important, too short or too long will cause problems with sealing.
3. Place the new piece in the silicone holder. Ensure that the silicone rubber is completely and evenly placed in the groove. It is also important that the surface of the silicone rubber is smooth after it is in place and is shows no signs of tension.



Appearance may differ per model but principle remains the same.

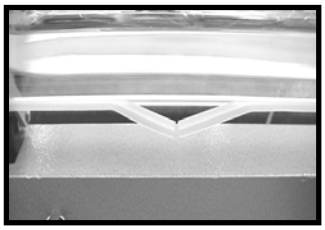
Replace lid gasket

The lid gasket ensures that the vacuum chamber is completely sealed during the machine cycle. This is essential to achieve a maximum vacuum. The lid gasket wears due to the extreme pressure differences and must be replaced regularly. Inspect the lid rubber weekly for tears or damage.

Average maintenance cycle for silicone rubber is **at least once every 6 months**
(this indication refers to regular use of the machine, on average 5 hours a day and with standard products. No rights can be derived from this indication)

The length of the new lid gasket is measured against the old rubber. If the lid gasket is too short or too long it can cause problems closing the lid or leak.

The gasket must be placed evenly and without tension in the holder. The ends must be cut straight and must be laid tightly against each other to avoid leakage.



Ensure that the ends of the lid gasket line up accurately

Lid rubbers can vary per model, *see page 21*

LIST OF SERVICE PARTS

VACUUM PUMP PARTS

BUSCH VACUUM PUMPS	MODELS
004m³/h	MINI JUMBO
008 m³/h	JUMBO PLUS
016 m³/h	JUMBO 35 / 42

BUSCH	STANDARD OIL			OIL EXHAUST FILTER		
	Type	Reference	Litres	Type	Reference	amount
004 m³/h	VG 22	0439501	0.05	50-60Hz	0939000	1
008 m³/h	VG 32	0439510	0.20	50-60Hz	0939001	1
016 m³/h	VG 32	0439510	0.30	50-60Hz	0939003	1

SEAL SYSTEMS

PARTS	SPECIFICATIONS	REFERENCE	QUANTITY
Teflon tape	46 mm teflon tape	0305515	length sealing bar + 5 cm
Single seal Mini Jumbo, Jumbo Plus	1 x 3.5 mm round wire	0305000	1 wire length of sealing bar + 15 cm
Double seal Jumbo 35 ,Jumbo 42	2 x 3.5 mm round wire	0305000	1 wire length of sealing bar + 15 cm
Cut-off seal Jumbo 35 ,Jumbo 42	1 x 3.5 mm round wire 1 x 1.1 mm round wire	0305000 0305010	1 wire length of sealing bar + 15 cm 1 wire length of sealing bar + 15 cm
Silicone Rubber	Silicone 17 x 8	0320200	length silicone holder

LID GASKET

MODELS	REFERENCE	LENGTHS PER MODEL (in cm)	
MINI JUMBO / JUMBO PLUS	0320100	MINI JUMBO / JUMBO PLUS	140
JUMBO 35 / 42	0320215	JUMBO 35 JUMBO 42	175 190

Lengths specified are always a little longer and must be cut to the correct length.

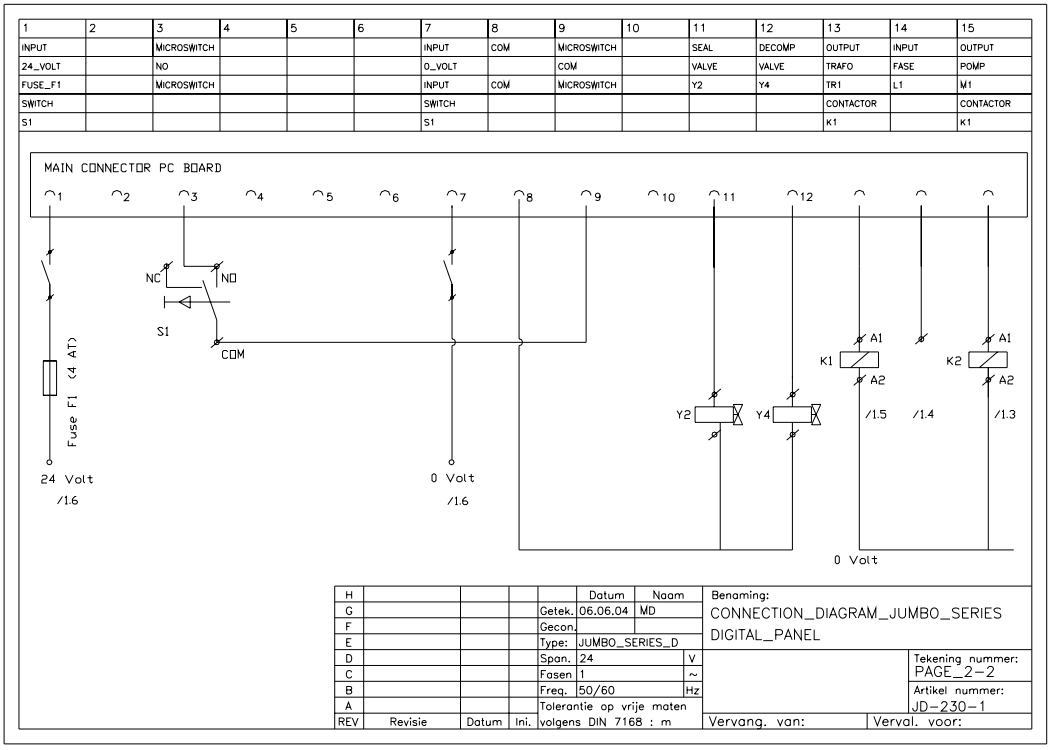
TECHNICAL SPECIFICATIONS

MODEL	VACUUM CHAMBER	LID	HOUSING	DIMENSIONS (mm)	PUMP (m^3/h)	FINAL VACUUM (%)
JUMBO SERIES						
MINI JUMBO	Stainless-steel	Transparent	Stainless-steel	330 x 450 x 295	004	99,80%
JUMBO PLUS	Stainless-steel	Transparent	Stainless-steel	330 x 450 x 295	008	99,80%
JUMBO 35	Stainless-steel	Transparent	Stainless-steel	450 x 525 x 385	016	99,80%
JUMBO 42	Stainless-steel	Transparent	Stainless-steel	490 x 525 x 430	016	99,80%

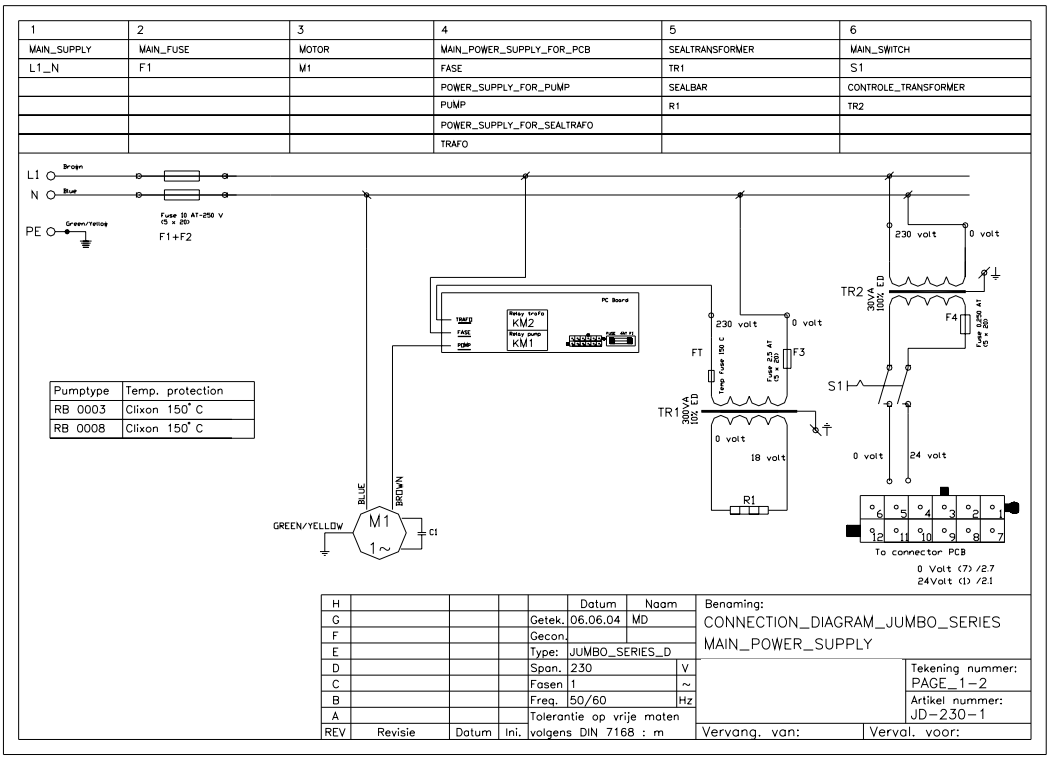
Specifications may deviate with optional models

Standard ambient temperature	5 ^{0}C – 30 ^{0}C
For deviating ambient temperatures	see page 17 for special oil specifications
Maximum use per day	5 hours
Electricity	Voltage : see machine tag Frequency : see machine tag Power : see machine tag
Electrical connection	Maximum fluctuation ± 10% of the official registered voltage
Sound level	< 70 DB

ELECTRICAL DIAGRAMS



Main Current Diagram



Diagrams are shown for standard configurations.

List of fuses

- Fuses have been placed where the power comes onto the component board
- Fuses have been placed on transformers (control and seal)
- Two fuses have been placed on the control circuit.

Due to different mains voltages and machine models there is a variety of fuse types that can be present in the machine. Refer to the specifications of the relevant component for the correct types and values of fuses for replacement, or contact the supplier.

Caution, to avoid fire and/or other irreparable damage to the machine, replacement fuses must always be of the same type with the same value as the fuses being replaced !!

Spanning

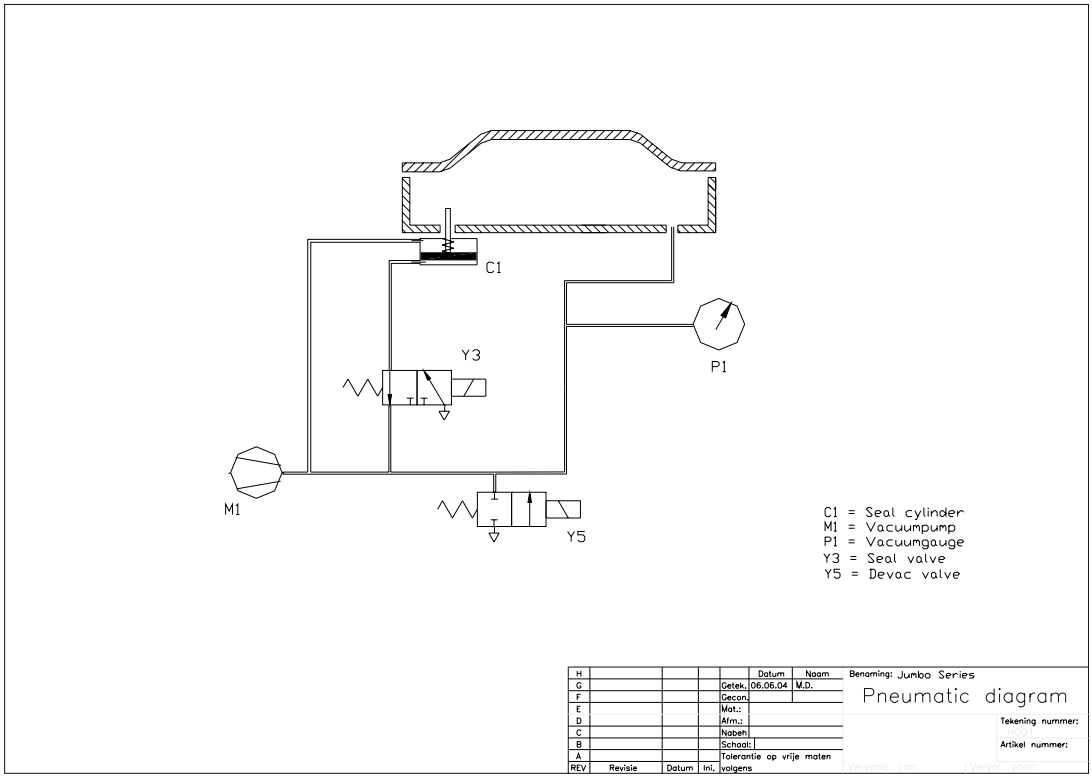
Caution, the maximum allowable voltage fluctuation is ± 10% of the official voltage stated on the type tag.

ERROR CODES

The control is programmed with an error code. This error code indicates there is a problem with the proper function of the lid switch of there is a user fault.

F1: This code indicates that the cycle (lid switch) will be interrupted prematurely.
Example: the cover of the machine closes after starting, but before sufficient vacuum is present to keep the cover closed the operator lets go of the cover. The F1 code will now be shown on the display.
If this keeps happening please contact the supplier or your dealer

PNEUMATIC DIAGRAM



Diagrams are shown for standard configurations.

PROBLEM SOLVING

PROBLEM	CAUSE	SOLUTION
Machine does not work	• The plug is not plugged into the wall socket. • The main fuse is burnt. • The ON/OFF switch's contact block has come loose. • The circuit board fuse is burnt.	• Plug the plug into the wall socket. • Replace the fuse (Ensure the correct value). • Check this and if necessary re-fasten it. • Disassemble the front panel and replace the fuse.
Machine does not work Operating panel is on	• The control transformer fuse is burnt. • The micro-switch that is activated when the lid is closed is disordered or faulty. • There is an internal malfunction.	• Check this and if necessary replace it. • The micro-switch must be properly adjusted or replaced • Consult the supplier.
Transparent lid does not open automatically	• The gas spring is faulty	• Consult the supplier.
Final vacuum is insufficient	• The set vacuum time is too short. • There is too little oil in the vacuum pump. • The extraction hole at the back of the vacuum chamber is partially covered by the vacuum bag during extraction • The lid gasket is worn. • The oil is contaminated • The oil exhaust filter is saturated.	• Extend the vacuum time. • Check the oil level and top up if necessary (Note the type and quantity). • Place the vacuum bag closer to the sealing beam. • Replace the lid gasket. • Replace the oil (Note the type & amount). • Replace the oil exhaust filter / Consult the supplier. .
The machine builds up a vacuum slowly	• The pump's extraction filter is blocked. • The oil exhaust filter is saturated.	• Consult the supplier. • Replace the oil exhaust filter / Consult the supplier.

PROBLEM	CAUSE	SOLUTION
The vacuum bag is not properly and/or correctly sealed.	• The vacuum bag is being placed incorrect on the sealing bar. • The sealing time is too long or too short. • The silicone rubber in the silicone holder is damaged or worn. • The teflon tape is damaged. • The inside of the vacuum bag opening is contaminated or greased.	• Place the vacuum bag neatly and smoothly on the sealing bar. Ensure that the opening of the bag is always within the vacuum chamber. • Adjust the sealing time longer or shorter. • Replace the silicone rubber. • Replace the Teflon tape • Clean the vacuum bag's opening.

In the case of other problems or questions contact the supplier .

REMARKS ON SPECIAL APPLICATIONS

PACKAGING LIQUID PRODUCTS

The machines can be also used for packaging liquid products like soups or sauces. During this process the vacuum process must be carefully monitored through the lid. The [STOP VACUUM] key must be pressed as soon as bubbles appear in the product; the saturation point (same as boiling point) has then been reached.

The saturation point of liquids is reached at a certain ratio of low pressures and high temperatures (see the example table for water below). The saturation point will be reached sooner in the vacuum process when packaging liquids with a high temperature (the amount of vacuum will therefore be less).

Henkelman recommends therefore to first cool liquid products before packaging. By so doing an optimal vacuum can be achieved for the product.

Saturation point of water – relation between the pressure and temperature of the water

Vacuum pressure [mbar]	1000	800	600	400	200	100	50	20	10	5	2
Boiling Point Temperature [°C]	100	94	86	76	60	45	33	18	7	-2	-13

A handy tip when packaging liquid products is to use a liquid insertplate so that the product remains at the bottom of the packaging during the vacuuming process and there is less risk of liquid splashing out of the packaging. Contact the supplier or Henkelman BV for more information about the liquid insertplate.

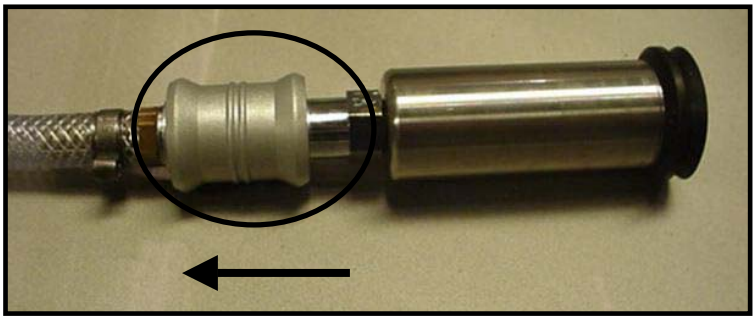
EXTERNAL VACUUMING OF FOOD CONTAINERS (if applicable)

The JUMBO series can be equipped with an option for external vacuuming of special food containers. This system can vacuum special dishes for longer storage life of the (food) products in the dish. The dish has a special lid with valve. Contact the supplier for more information about the dishes. The system for the machine consists of a hose with vacuum applicator.

Operation External Vacuum Food Containers

1. Start the machine

2. Place the hose connector over the extraction opening of the machine chamber of the machine



3. Check that the sliding valve on the vacuum applicator is on the side of the hose (closed position).

4. Press the conditioning key C appears in the display. Press the SELECTOR key until [E] (External vacuuming) appears on the display.

5. Place the vacuum applicator over the valve of the container and slide the sliding valve towards the lid to open the valve.

6. Press the + Key. The vacuum pump starts to run and the container is vacuumed.

7. When the vacuum meter reaches –1 then the container is fully vacuumed.

8. Press the – Key to stop the vacuum pump

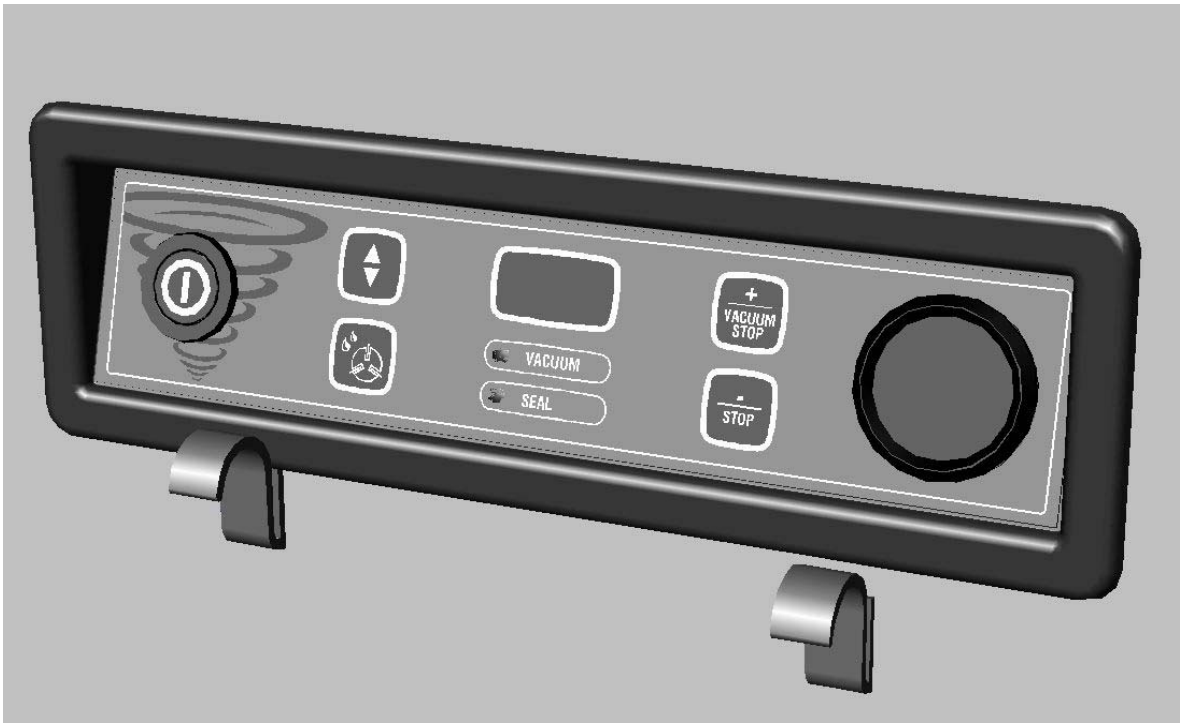
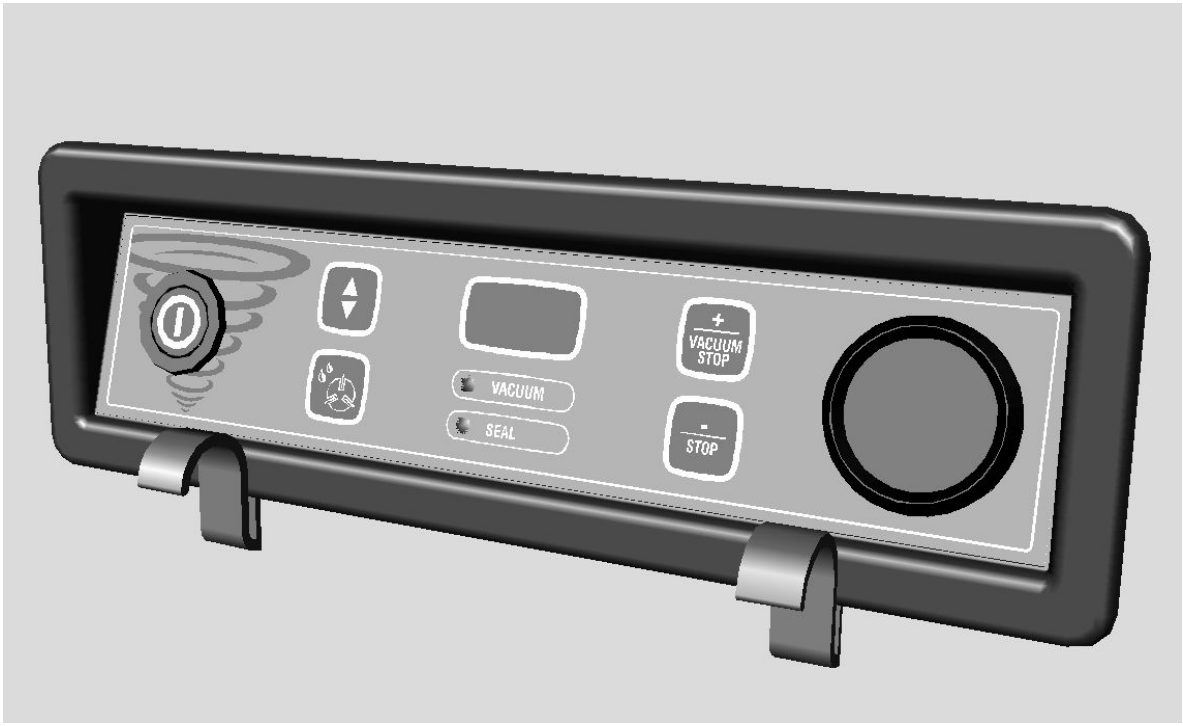
9. The vacuum applicator can now be removed from the lid by sliding back the slider.

10. The container is now ready for cool storage.

11. If the machine needs to be used for normal applications then the hose can be removed from the extraction opening and the normal program mode can be selected by pushing twice the SELECTOR key.

NOTES / MAINTENANCE SCHEDULE

Date	Carried out by whom?	What done ?	Remarks ?

Removal tools front panel

With every machine we ship-out we enclose two special tools to make it possible to remove the front panel.
The tools slide in the slots at the bottom side of the front panel.
Now lift it a little and pull it towards you.